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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,892	12/08/2003	Jun-Won Kang	1568.1080	9667

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STEIN, MCEWEN & BUI, LLP  
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SUITE 300  
WASHINGTON, DC 20005

EXAMINER
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LAIOS, MARIA J

ART UNIT	PAPER NUMBER
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1753

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/728,892	<b>Applicant(s)</b> KANG ET AL.	
	<b>Examiner</b> Maria J. Laios	<b>Art Unit</b> 1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION:

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 11-24 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11-24 is/are rejected.
- 7) ☒ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Response to Amendment***

1. This office action is in response to the amendment filed on 18 May 2007. Claim 10 has been cancelled. Claims 1, 5, 6, 7, 9, 11-14 and 16 have been amended. Claims 21-24 are added. Claims 1-9 and 11-24 are pending and are finally rejected for reasons necessitated by applicant's amendments.

### ***Claim Objections***

2. Claim 3 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. It appears to the examiner that claim 3 does not further limit amended claim 1, but restates the material that was added to claim 1.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3, 5 and 21-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Toyokazu et al. (JP 11-135101).

With regard to claims 1, 3 and 21-22 Toyokazu et al. discloses an electrode unit (Drawings 1, 3) comprising a first electrode plate (10) having a first electrode uncoated portion (1) on a first electrode collector coated with a first electrode active material (2), a second electrode plate (11) having a second electrode uncoated portion (1) of the second electrode collector coated with a second electrode active material (2); a separator (12) interposed between the first (10) and second (11) electrodes wherein a folded portion (1a) is provided on both the first and second electrodes so as to have uncoated portion of the electrode plate face each other (Drawing 2 a,b).

With regard to claim 5, Toyokazu et al discloses the uncoated portion (1) folded upon itself such that any burrs that occurred from the manufacturing process will come in contact with the same material/polarity (Figure 2).

### *Claim Rejections - 35 USC § 103*

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1753

6. Claims 2, 6, 7, 9, 12-14, 16-20 and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toyokazu et al. (JP 11-135101) in view of Iwasaki et al. (US 6,325,611 B1).

With regard to claim 2, Toyokazu et al. discloses the electrode unit as disclosed above and incorporated herein but fails to disclose an insulated tape on the folded portion. Iwasaki discloses an electrode in which an insulating tape is attached to it. Iwasaki discloses an insulating tape affixed to the electrode (16, figure 3) to prevent a short circuit from occurring (col. 13 lines 63-67, col. 14 lines 1-3). It would have been obvious to one of ordinary skill in the art at the time of the invention to apply the insulating tape of Iwasaki to the folded portion of Toyokazu in order to prevent a short circuit.

With regards to claims 6 and 7, Toyokazu et al. discloses the electrode unit as disclosed above and incorporated herein after but fails to disclose the folded portion of the second electrode plate is position to overlies at least a portion of the electrode plate where the first electrode tab is disposed and a separator is interposed between the folded portion and the first electrode plate with an insulating tape attached to a portion of the second electrode plate corresponding to the location of the first electrode tab on the first electrode plate. Iwasaki discloses an insulating tape (16) attached to the exposed portion of the positive electrode (1, figure 3) where separator 3 is between lead (15) of the negative electrode (2) thus the insulating tape would prevent a short circuit (col. 13 lines 63-67 and col. 14 lines 1-3).

Art Unit: 1753

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the insulating tape of Iwasaki to the folded portion of Toyokazu to prevent a short circuit.

With regard to claim 9, 23 and 24, Toyokazu et al. discloses a secondary battery (Figure 6) comprising a first electrode plate (10) having a first electrode uncoated portion (1) on a first electrode collector coated with a first electrode active material (2), a second electrode plate (11) having a second electrode uncoated portion (1) of the second electrode collector coated with a second electrode active material (2); a separator (12) interposed between the first (10) and second (11) electrodes wherein a folded portion (1a) is provided on both the first and second electrodes so as to have uncoated portion of the electrode plate face each other (Drawing 2 a,b), a case (26) sealed with lid (19) but fails to connect one of the terminals to the case thus making the case a terminal itself. Iwasaki et al discloses a wound electrode unit in an electrically conductive casing (col. 22 lines 66-67).

It would have been obvious to one of ordinary skill in the art at the time of the invention to insert the electrode unit of Toyokazu in the casing of Iwasaki et al to make the case a terminal depending on the polarity design of the battery compartment on an appliance that uses the battery.

With regard to claim 12, modified Toyokazu discloses the uncoated portion (1) folded upon itself therefore the burrs that occur from the manufacturing process will come in contact with the same material/polarity (Figure 2).

Art Unit: 1753

With regard to claims 13 and 14, modified Toyokazu discloses an insulating tape (16) attached to the exposed portion of the positive electrode (1, figure 3) where separator (3) is located between lead (15) of the negative electrode (2) and the exposed portion of the positive electrode (1) thus the insulating tape would prevent a short circuit(col. 13 lines 63-67 and col. 14 lines 1-3).

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the insulating tape of Iwasaki to the folded portion of Toyokazu to prevent a short circuit.

With regard to claim 16, modified Toyokazu discloses the secondary battery as discussed above and incorporated herein and further teaches an insulating tape attach to the folded portion to prevent a short circuit from occurring (col. 13 lines 63-67, col. 14 lines 1-3).

With regard to claim 17 -20, modified Toyokazu further discloses the negative electrode collector as copper foil and the active material as graphite (col. 20 lines 15-23).

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Toyokazu et al. (JP 11-135101) in view of Hisash (JP 10-261438).

With regard to claim 4, Toyokazu discloses the electrodes, as discussed above and incorporated herein, are wound around pin 8, but fails to show the fold portion is at the winding start. Hisash discloses electrodes in which the folded portion (35) is at the beginning of the wind (Figure 6).

Art Unit: 1753

It would have been obvious to one of ordinary skill at the time of the invention to begin winding at the folded portion depending on where the battery terminals are desired to be located through the battery casing since winding at the beginning would give terminals located near the center of the electrode unit.

8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Toyokazu et al. (JP 11-135101) in view of Narukawa et al. (US 5,508,122).

With regard to claim 8, Toyokazu discloses the electrode unit as discussed above and incorporated herein, but fails to address the length of the uncoated portion (Figure 2) as 5-15mm. Narukawa discloses an exposed region by not applying slurry from the end of the foil to approximately 20 mm inboard (col. 2 lines 30-33).

It would have been obvious to one of ordinary skill to have a 20 mm exposed area as in order to have a large enough exposed area for current collection. Although Narukawa does not disclose 15 mm, it would have been obvious to one of ordinary skill in the art at the time of the invention to have a 15 mm exposed uncoated region instead of 20 mm because a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties.

Titanium Metals Corp. of America v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985)



Art Unit: 1753

9. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Toyokazu et al. (JP 11-135101) in view of Iwasaki et al. (US 6,325,611 B1) as applied to claim 9 above and further in view of Hisash (10-261438).

With regard to claim 11, modified Toyokazu discloses the secondary battery as discussed above and incorporated herein but fails to disclose the folded portion is at the winding start position. Hisash discloses electrodes in which the folded portion (35) is at the beginning of the wind (Figure 6).

It would have been obvious to one of ordinary skill at the time of the invention to begin winding at the folded portion depending on where the battery terminals are desired to be located through the battery casing since winding at the beginning would give terminals located near the center of the electrode unit.

10. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Toyokazu et al. (JP 11-135101) in view of Iwasaki et al. (US 6,325,611 B1) as applied to claim 9 above and further in view of Narukawa et al. (US 5,508,122).

With regard to claim 15, modified Toyokazu discloses the secondary battery as discussed above and incorporated herein but fails to address the length of the uncoated portion (Figure 2) as 5-15mm. Narukawa discloses an exposed region by not applying slurry from the end of the foil to approximately 20 mm inboard (col. 2 lines 30-33).

Art Unit: 1753

It would have been obvious to one of ordinary skill to have a 20 mm exposed area as in order to have a large enough exposed area for current collection. Although Narukawa does not disclose 15 mm, it would have been obvious to one of ordinary skill in the art at the time of the invention to have a 15 mm exposed uncoated region instead of 20 mm because a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985)

### *Response to Arguments*

11. Applicant's arguments with respect to claims 1-9 and 11-20 have been considered but are moot in view of the new ground(s) of rejection.

### *Conclusion*

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

Art Unit: 1753

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria J. Laios whose telephone number is 571-272-9808. The examiner can normally be reached on Monday - Thursday 9:30 - 6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on 571-272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MJL *mjl*

*Susy Tsang-Foster*  
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PRIMARY EXAMINER